

REMARKS

As a preliminary, Applicant and Applicant's representative thank the Examiner for the interview of March 3, 2010.

By the present amendment, claim 1 has been amended to recite that the aqueous solvent in the swelling bath is water, and a temperature of the swelling bath is in a range of from 15 to 50°C, and that the polyvinyl alcohol-based film contains (i) polyvinyl alcohol having an average degree of polymerization in the range of from 1,000 to 4,000 and a saponification degree in the range of from 98 to 100 mol%, and (ii) glycerine in an amount of from 5 to 15% by mass as an additive.

Support for the added recitations is found in the original application, for example, at least the Examples (aqueous solvent is water), claim 14 (bath temperature), page 11, lines 13-17 (PVA) and page 12, lines 10-12 (glycerine).

Claims 11 and 14 have been canceled.

New claim 37 has been added to recite that the swelling bath is water. Support for the added recitation is found in the original application, for example, at least the Examples.

Claims 1, 8-9, 12-13, 15-18, and 34-37 are pending in the present application. Claim 1 is the only independent claim.

I. **New matter rejection**

In the Office Action, claims 1, 8-9, 11-18, 31-34, and 36 are rejected under 35 U.S.C. 112, first paragraph, as introducing new matter.

It is alleged in the Office Action that the following expressions lack support:

- Claim 1: wherein an arbitrary point on the film is impregnated in the swelling bath for a total length of time of from 63 to 130 seconds
- Claim 33: the required length of time (b) is from 20 to 120 seconds
- Claim 34: the required length of time (b) is from 33 to 120 seconds
- Claim 36: the required length of time (a) is from 2 to 11 seconds
- Claim 36: The required length of time (b) is from 35 to 110 seconds

Reconsideration and withdrawal of the rejection is respectfully requested.

With respect to claim 1, the values of 63 seconds and 130 seconds total impregnation time are explicitly exemplified by Examples 2, 3, and 7. Further, Examples 4, 1, 5, 6, and 8 exemplify total impregnation times of 75, 92, 95, 121, and 128 seconds, respectively.

It is submitted that the person of ordinary skill in the art would immediately derive from this disclosure that the present specification discloses practicing the method of the present invention for a total impregnation time of from 63 seconds to 130 seconds.

With respect to claims 33-34, it is submitted that the Office Action at page 11, although it references page 5, line 35 and page 6, line 24 of the specification, actually cites ranges for periods (a)+(b) of 25 to 180 seconds and 30 to 160 seconds from page 6, line 28 of the specification.

In contrast, the passage at page 6, line 23 and claim 1 disclose a range of 13 to 120 seconds, and the passage at page 6, line 24 of the specification discloses ranges from 20 to 100 seconds and from 33 to 80 seconds.

It is submitted that the person of ordinary skill in the art would immediately derive from this disclosure that the present specification discloses practicing the method of the present invention with a length of time (b) is from 20 to 120 seconds, as well as for a length of time (b) from 33 to 120 seconds.

With respect to claim 36, the passage at page 5, lines 29-35 of the specification discloses a length of time (a) in the range of from 0.6 to 12 seconds, preferably, 1.2 to 9 seconds, and more preferably from 2.5 seconds to 7 seconds, and the passage at page 6, lines 23-24 of the specification discloses a length of time (b) in the range of from 13 to 120 seconds, preferably 20 to 100 seconds and more preferably from 33 to 80 seconds, and further, Examples 2 and 3 at page 36 of the specification disclose lengths of time (a) of 2 and 11 seconds, respectively, and lengths of time (b) of 35 and 110 seconds, respectively, and the other Examples also have values (a) and (b) distributed between these respective values.

It is submitted that the person of ordinary skill in the art would immediately derive from this disclosure that the present specification discloses practicing the method of the present invention with a length of time (a) from 2 to 11 seconds and a length of time (b) from 35 to 110 seconds.

In view of the above, it is submitted that the rejection should be withdrawn.

II. Art rejections

In the Office Action the following rejections are set forth:

- Claims 1, 8, 14-17 and 31-36 are rejected under 35 U.S.C. 103(a) as obvious over Ikemoto et al., JP10-153709A (“Ikemoto”),

- Claim 9 is rejected under 35 U.S.C. 103(a) as obvious over Ikemoto in view of Sanefuji et al., US2002/0001700A1 (“Sanefuji”),
- Claim 11 is rejected under 35 U.S.C. 103(a) as obvious over Ikemoto in view of Harita et al., US2001/0024322A1 (“Harita”),
- Claim 12 is rejected under 35 U.S.C. 103(a) as obvious over Ikemoto in view of Burger, US3,492,185 (“Burger”),
- Claim 13 is rejected under 35 U.S.C. 103(a) as obvious over Ikemoto in view of Kondo, JP2000-147252 (“Kondo”), and
- Claim 18 is rejected under 35 U.S.C. 103(a) as obvious over Ikemoto et al. in view of US5,071,906 to Tanaka et al. (“Tanaka”).

Reconsideration and withdrawal of the rejections is respectfully requested.

As discussed at the interview, it is submitted that, contrary to the position set forth in the Office Action, Ikemoto does not provide any incentive or guidance to reduce impregnation time below the 4-6 minutes exemplified in Ikemoto.

Further, contrary to the interpretation on page 12 of the Office Action, it is submitted that a person of ordinary skill in the art would not appreciate that “duration of specific guide roll contact and degree of polymer film saturation state in relation to guide rolls” are “variables influencing the duration of submersion and degree of swelling,” and it is also submitted that the person of ordinary skill in the art would not appreciate that these variables are “result effective variables.”

Namely, Ikemoto does not provide any basis for the person of ordinary skill in the art to “appreciate” that “duration of specific guide roll contact and degree of saturation state in relation to guide rolls” would be “result effective variables as well.” Thus, even if, arguendo, a person of the art was interested in reducing impregnation time, that person would find no guidance in Ikemoto on whether the process of Ikemoto could be successful with a reduced impregnation time, and that person would find no guidance in Ikemoto on how to modify the process of Ikemoto to adjust to a reduced impregnation time.

Rather, a person of the art would understand from Ikemoto that the range of 4-6 minutes is what is recommended for appropriate impregnation with a view at limiting wrinkles. Thus, Ikemoto does not provide any reasonable expectation of a successful impregnation using the process of Ikemoto with a total impregnation time other than the indicated range of 4-6 minutes.

Reference is made to the Declaration and Supplemental Declaration by Mr. Manabu Miyazaki submitted previously in this application, which explains the understanding a person of the art would derive from Ikemoto.

Further, although Ikemoto paragraph 0008 and 0033 discuss display unevenness, these passages, as well as Ikemoto generally, completely fail to discuss, either reducing total impregnation time, or defining lengths of time (a) and (b) as in the present invention, let alone defining ranges for these lengths of time, especially regarding length of time (a).

For reference, an English translation of Ikemoto paragraphs 0008 and 0033 is submitted with this paper.

In summary, it is submitted that Ikemoto does not create a prima facie case of obviousness regarding the method of the presently claimed invention.

In contrast, the present inventors have observed that a PVA-based film is subject to an abrupt swelling phase about 15 to 25 seconds after being dipped in a swelling bath. Further, they have observed that display unevenness results from this abrupt swelling occurring in relation to the time when the film is contacted with a first roller in the swelling bath. Thus, they have designed a process for impregnation that avoids this problem, primarily by defining a length of time (a) between the time when the polymer film is brought into contact with the aqueous solvent and the time when the polymer film is brought into contact with the first guide roll, in the range from 0.6 to 12 seconds, as recited in present claim 1.

Ikemoto is completely ignorant of any problems related to abrupt swelling at 15 to 25 seconds, let alone any suggestion or guidance on how to reduce display unevenness in relation to this abrupt swelling phase. Thus, Ikemoto providing a length of time (a) as in the present invention would have been pure happenstance, which is absolutely not established. Further, even if, arguendo, the length of time (a) as in the presently claimed invention had been made available starting from Ikemoto (which is denied), Ikemoto would not have had the appropriate understanding to make available lengths of time (b) and total impregnation time as in the presently claimed invention. Therefore, Ikemoto alone or in any combination with the other cited references does not render the presently claimed invention prima facie obvious.

Further, it is submitted that any prima facie case of obviousness would be rebutted by the showing of unexpected results made in the present application.

Namely, as discussed at the interview, it is submitted that the data and explanations in the present specification and in the Declaration and Supplemental Declaration submitted previously in this application establish that the selection of length of time (a) within the range as recited in present claim 1 provides a significant improvement in display unevenness reduction. See, e.g., the first graph at page 2 of the Supplemental Declaration.

Thus, contrary to the interpretation in the Office Action, the graph evidences significant improvement within the range for length of time (a), as opposed to lack of improvement outside the range, and that the experimental results include a large number of experimental values distributed within and at about the limits of the claimed range for length of time (a).

More specifically, it is submitted that the first graph establishes and illustrates, first, the unexpected result regarding the selection of length of time (a), and second, that the showing of unexpected result is commensurate with the claimed range of from 0.6 to 12 seconds, as recited in present claim 1.

Reference is also made to paragraph 7 of the Supplemental Declaration by Mr. Manabu Miyazaki submitted previously in this application, in which he states: "I believe that a person of the art would find these experimental results sufficient to be convinced that a period (a) selected in a range from 0.6 to 12 seconds provides unexpectedly improved results in terms of reduction of display unevenness, when period (b) is selected in a range from 13 to 120 seconds and total impregnation time is from 63 to 130 seconds."

Further, regarding lengths of time (b) and total impregnation time, the second and third graphs in the Supplemental Declaration evidence that the experimental values were obtained

with length of time (b) values and total impregnation time values distributed within and at about the limits of the claimed ranges for length of time (b) and for total impregnation time.

It is submitted that the second and third graph establish and illustrate that the experimental data is commensurate with the required length of time (b) of from 13 to 120 seconds, and the total length of time of from 63 to 130 seconds, respectively, as recited in present claim 1.

With respect to the swelling bath, the experimental data in the present application was obtained with water as the swelling bath.

Therefore, it is submitted that the experimental data is commensurate with the claimed feature of water as the aqueous solvent in the swelling bath, as recited in present claim 1.

With respect to the bath temperature, the experimental data in the present application was obtained with temperature values of 25, 32, and 42 degrees C, respectively, i.e., values distributed within the claimed range. See, e.g., the Data Table in the Declaration.

Thus, it is submitted that the person of the art would recognize that the experimental data is commensurate with the claimed range of from 15 to 50°C, as recited in present claim 1.

With respect to the polymer film, the experimental data in the present application was obtained with a PVA-based film made with PVA having an average degree of polymerization of 2,400 and a saponification degree of 99.9%, and containing glycerine in an amount of 12+-1.5% by mass.

For confirmation regarding the polymer film used in the experiments, reference is made to paragraph 4 of the Second Supplemental Declaration by Mr. Manabu Miyazaki submitted with this paper.

Therefore, it is submitted that the person of the art would recognize that the experimental data is commensurate with the claimed range of PVA having an average degree of polymerization in the range of from 1,000 to 4,000 and a saponification degree in the range of from 98 to 100 mol%, and containing glycerine in an amount of from 5 to 15% by mass as an additive, as recited in present claim 1.

Reference is also made to paragraph 5 of the Second Supplemental Declaration, in which Mr. Manabu Miyazaki states: “As a person of the art myself, I find these experimental results sufficient to convince a person of the art that a period (a) selected in a range from 0.6 to 12 seconds provides unexpectedly improved results in terms of reduction of display unevenness, when period (b) is selected in a range from 13 to 120 seconds and total impregnation time is from 63 to 130 seconds, for a swelling bath wherein the aqueous solvent is water, with a temperature of the swelling bath is in a range of from 15 to 50°C, and wherein the hydrophilic polymer film is a polyvinyl alcohol-based film containing (i) polyvinyl alcohol having an average degree of polymerization in the range of from 1,000 to 4,000 and a saponification degree in the range of from 98 to 100 mol%, and (ii) glycerine in an amount of from 5 to 15% by mass as an additive.”

In summary, Ikemoto is completely silent regarding relative timing of the guide rolls, and especially the first guide roll, relative to saturation state during impregnation, and Ikemoto

suggests much longer impregnation times than the presently claimed invention. Further, the other cited references fail to remedy the deficiencies of Ikemoto. Still further, unexpected results using the presently claimed method have been established in a manner commensurate with the scope of the claims. Therefore, the present claims are not obvious over Ikemoto taken alone or in any combination with the other cited references.

In addition, with respect to the dependent claims, it is submitted that the cited references fail to teach or suggest the combined features of these respective claims. In particular, with respect to each of claims 33-36, there would have been no motivation or incentive to arrive at the features as recited in each of claims 33-36, and the Applicants have made a showing of unexpected results commensurate with the scope of each of claims 33-36. Also, with respect to claim 37, the Applicants have made a showing of unexpected results using water as a swelling bath, so the showing of unexpected results is commensurate with the scope of claim 37. Therefore, each of the dependent claims, and in particular each of claims 33-36 and 37, is not obvious over the cited references taken alone or in any combination.

In view of the above, it is submitted that the rejections should be withdrawn.

Conclusion

In conclusion, the invention as presently claimed is patentable. It is believed that the claims are in allowable condition and a notice to that effect is earnestly requested.

If there is, in the Examiner's opinion, any outstanding issue and such issue may be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Application No. **10/522,618**
Art Unit: **1792**

Amendment under 37 CFR §1.111
Attorney Docket No. **052009**

If this paper is not timely filed, Applicant(s) respectfully petition(s) for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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